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Survey: Iowa no-till holds steady

Abstract

A recent survey shows no change in conventional or no-till systems status in Iowa corn and soybean rotation, in spite of perception or informal reports to the contrary. The survey asked producers about their tillage practices during crop years 1997–1999.

Keywords

Agronomy, Agricultural and Biosystems Engineering

Disciplines

Agricultural Science | Agriculture | Agronomy and Crop Sciences | Bioresource and Agricultural Engineering

INTEGRATED CROP MANAGEMENT

Survey: Iowa no-till holds steady

A recent survey shows no change in conventional or no-till systems status in Iowa corn and soybean rotation, in spite of perception or informal reports to the contrary. The survey asked producers about their tillage practices during crop years 1997–1999.

Background

The Iowa Resources Management Partnership (IRMP) was formed in 1999 by a consortium of private and public organizations promoting and addressing issues related to conservation tillage in Iowa. The IRMP was charged with researching informal reports of a decline in the use of conservation tillage and no-till in Iowa that had occurred since the most recent survey conducted by the Natural Resources Conservation Service (NRCS) and the Conservation Tillage Technology Information Center (CTIC) in 1997.

A total of 340 survey responses (with a 51.2 percent response rate) of corn and soybean producers in 18 Iowa counties was tabulated. The survey found that preferences for tillage systems among those producers surveyed have not changed (in terms of both the number of acres and the proportion of producers using conservation tillage and no-till) since the 1997 NRCS/CTIC survey.

It is important to note that the data gathered by CTIC are taken from independent observers of the field surface after planting. The IRMP data are based on survey responses by growers who indicated what management practices they used. There may be some difference in how the independent observer and corn and soybean producer defines “no-till.” No-till was defined as a system where seeds are drilled/planted through the surface residue with no full-width, preplant tillage.

Results of the survey also showed that approximately one-third of producers used conventional tillage, one-third used conservation tillage, and one-third used no-till on land they farm. None of the survey’s findings support the view that a change in tillage practices occurred over the 3-year period.

Should every producer convert to no-till? Every producer should evaluate and determine what is best for his or her specific field conditions and management requirements. Conservation tillage and no-till protect natural resources and are important practices for all producers who cultivate land. And, given the current drought trend, no-till can minimize moisture loss and crop failure.

Survey highlights of responding producers

- 40 percent have never tried no-till; 21 percent

However, making the choice of whether to adopt a conservation tillage or no-till practice requires that producers understand more than the implications of their tillage choices on the broader issues concerning water quality and soil erosion.

Producers who farm in rolling terrain also have realized that no-till can help reduce costs while maintaining yields and reducing soil erosion, thereby building soil quality and overall soil productivity. The balance between what is environmentally responsible and economically feasible is a key issue in choosing a conservation tillage system.

But what is less well-known is that “flat-landers” also can use no-till to do a better job of controlling costs with minimal reduction in corn yield and no reduction in soybean yield. If given a chance to prove itself on flat land, producers may find that no-till can hold their yields nearly even, and enhance their profitability by lowering production costs.

Multiple factors influencing tillage decisions

The issues of conversion costs, availability of equipment, and planting windows revealed some of the difficulties in adopting conservation tillage systems.

Many producers cite machinery conversion costs as one of the leading reasons for avoiding no-till. Converting to no-till means (for most producers) the addition of heavier down-pressure springs, row cleaners, and possibly a coulter on each planter row unit. But the actual cost of converting existing equipment ranges between \$300 and \$400 per planter row, which for many producers amounts to an additional production cost of approximately \$1 or \$2 per acre per year. The purchase of full-width tillage equipment is more expensive.

Plans for the future. The findings from the IRMP survey indicates that, contrary to perceptions, producers have not reduced their use of conservation tillage and no-till systems in Iowa corn and soybean rotations. In fact, the research demonstrates that possibly a larger proportion of corn and soybean producers in Iowa will be using conservation tillage or no-till on more acres in the future.

Based on producer responses to questions about their plans, it is reasonable to project that use of no-till will increase. More than 20 percent of corn and soybean producers who indicate they have never tried no-till plan to retire or get out of farming within 5 years. Only 8.3 percent of no-till farmers plan to retire or leave farming within 5 years.

A summary of the IRMP survey is posted on the Web at <http://extension.agron.iastate.edu/soils/tillage.html> and then click on Iowa Residue Management Partnership. Also see Tables 1 and 2.

tried but quit no-till; and 36 percent used no-till on at least part of their corn and soybean crop in 1999.

- 63 percent of producers cited a perception of lower yields and higher equipment conversion costs as a factor keeping producers from trying no-till; yet, no-till producers report similar soybean yields and corn yields that are only slightly lower.
- no-till producers operate on considerably more acres of corn and soybean than those with other tillage preferences (no-till was more likely to be found on larger cash grain farms).

Table 1. Average yield of corn and soybean by tillage preference

(bu/acre).

	Corn			Soybean		
Year	Never tried NT	Tried but quit NT	Currently use NT	Never tried NT	Tried but quit NT	Currently use NT
1997	157	154	151	51	51	52
1998	163	158	159	52	54	54
1999	166	165	162	50	50	51

NT, no-till.

Table 2. Reasons producers do not adopt no-till (% of survey respondents).

Issue	Most important reason
Lower yields	31.0
Equipment conversion costs	24.1
Plant emergence, spring	21.1
Weed problems in corn	11.2
Soil compaction	9.1
Don't want to learn a new system	7.8
Insect, disease control	4.3

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